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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/719,829 | 11/20/2003 | Daniel Bolliger | ESEC-P220US | 2981 |

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EXAMINER

GREENHUT, CHARLES N

ART UNIT

PAPER NUMBER

3652

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/719,829

Applicant(s)

BOLLIGER ET AL.

Examiner

Charles N. Greenhut

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/20/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

I. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim(s) 1 and 5 is/are rejected under 35 U.S.C. 102(b) as being anticipated by KOBAYASHI (US 5,351,872 A).

1.1. With respect to claim 1, KOBAYASHI discloses lowering the chip gripper to a position greater than the chip surface (Fig. 3), raising a needle (31) to raise the semiconductor chip (Fig. 3), and the chip detaching from the needle (Col. 2 Li. 59).

1.2. With respect to claim 5, KOBAYASHI additionally discloses the z position of gripper is measured and the z_0 position is updated (Col. 6 Li. 50 et seq.).

II. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 2-4, 6-8, and 13-20 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over KOBAYASHI (US 5,351,872 A) in view of LEU (US 6,648,215 B2).

1.1. With respect to claim 2-4, KOBAYASHI fails to teach a pneumatically controlled piston arrangement on the bondhead. LEU teaches a bondhead having a

pneumatically controlled piston arrangement (Fig. 4 embodiment) where the chip gripper (2) is connected to a piston bearing pneumatically on the bondhead (via chamber 12), z movement controlled by a moderate pressure differential or vacuum (Col. 4 Li. 43 et seq.). It would have been obvious to one of ordinary skill in the art to modify KOBAYASHI with the pneumatically controlled piston arrangement on the bondhead of LEU in order apply consistent pressure to a chip regardless of the chip thickness.

1.2. With respect to claims 6-8, KOBAYASHI additionally discloses the z position of gripper is measured and the z_0 position is updated (Col. 6 Li. 50 et seq.).

1.3. With respect to claims 13-20, KOBAYASHI fails to teach the chip gripper deflected on impact in relation to the bondhead (Col. 4 Li. 12 et seq.) and a sensor integrated into the bondhead (18) for measuring the z-position of the gripper. It would have been obvious to one of ordinary skill in the art to modify KOBAYASHI with the pneumatically movable piston arrangement and sensor on the bondhead of LEU in order apply consistent pressure to a chip regardless of the chip thickness.

2. Claim(s) 9 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over KOBAYASHI in view of STOLL (US 4715264 A).

2.1. With respect to claim 9, KOBAYASHI discloses a sensor for determining the position of the bondhead. KOBAYASHI does not describe the details of the sensor. Inductive sensors are well known and commonly used for providing position feedback as demonstrated by STOLL. It would have been obvious to one of ordinary

skill in the art to modify KOBAYASHI with the inductive sensor (13) of STOLL in order to determine the position of the bondhead.

3. Claim(s) 10-12 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over KOBAYASHI in view of LEU and further in view of STOLL (US 4715264 A).

3.1. With respect to claims 10-12, KOBAYASHI discloses a sensor for determining the position of the bondhead. KOBAYASHI does not describe the details of the sensor. Inductive sensors are well known and commonly used for providing position feedback as demonstrated by STOLL. It would have been obvious to one of ordinary skill in the art to modify KOBAYASHI in view of LEU with the inductive sensor (13) of STOLL in order to determine the position of the bondhead.

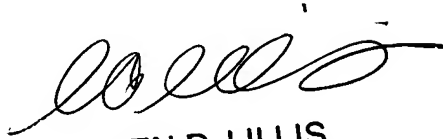
III. Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.
3. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information

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for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CG



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